

REMARKS/ARGUMENTS

Claims 35-42, 44-51, 53-60, 62-67 and 70 are active. The specification and abstract have been revised in conformance with the Examiner comments. The Brief Description of the Drawings section finds support in the original drawings and in the specification, e.g., in the description of Figs. 9 and 10 on pages 32 and 31, respectively, and of Figs. 11-13 at the bottom of page 45. Claim 35 has been revised for clarity, adding a step (iii) describing treatment steps for transforming an aqueous drop into reaction medium. Reaction medium is a general designation which includes the aqueous drop. A distinction is made between both corresponding to a progression in the process steps which is shown in Figs. 1-4 and at [0061] and [0071]. A controlled-atmosphere chamber and incubation is disclosed on page 20, lines 6. Introduction of support S into the spectrometer in step (iv) is illustrated in Fig. 9. For step (v) those of skill in the art would recognize that desorbing and ionizing take place in a mass spectrometer and that the actions of recording and analyzing the mass spectrum are also performed by the mass spectrometer. Desorption and ionization are also disclosed on page 29 of the specification. Claim 70 tracks claim 35 and finds support at the bottom page 24 describing reagents and on pages 28-29 describing preparation of samples for mass spectrometry. No new matter has been introduced. Favorable consideration of these amendments and allowance of this case are respectfully requested.

Objection—Abstract

The Abstract was objected to on formal grounds. This objection is moot in view of the revised Abstract.

Objection—Specification

The specification was objected to as lacking a brief description of the drawings and other section headings preferred under U.S. practice. These objections are moot in view of the amendments above.

Rejection—35 U.S.C. §112, first paragraph

Claims 35-69 were rejected under 35 U.S.C. 112, first paragraph, as lacking adequate enablement. The Applicants thank Examiner Wallenhorst for identifying enabled subject matter. This rejection is moot in view of the amendments to the claims.

Rejection—35 U.S.C. §112, second paragraph

Claims 35-69 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite. This rejection is moot in view of the amendments above.

Rejection—35 U.S.C. §112, second paragraph and 35 U.S.C. §101

Claims 68-69 were rejected under 35 U.S.C. 112, second paragraph and under 35 U.S.C. §101. These rejections are moot in view of the cancellation of the rejected claims.

Rejection—35 U.S.C. §103(a)

Claims 35-39 and 41-69 were rejected under 35 U.S.C. §103(a) as being unpatentable over Brown, et al., EP 1,284,495, in view of Schaack, et al., WO 2004/011938. This rejection is moot in view of the provision of an English translation of the priority document (attached).

Rejection—35 U.S.C. §103(a)

Claims 35-39 and 41-69 were rejected under 35 U.S.C. §103(a) as being unpatentable over Brown, et al., EP 1,284,496, in view of Thomas, et al., U.S. Patent No. 6,632,656. This rejection is moot in view of the provision of an English translation of the priority document (attached).

Moreover, both Brown and Thomas do not disclose or suggest deposit (e.g., culture of) cells on a support which itself is introduced into a mass spectrometer and thus omit an essential step of the method of the invention. The mass analysis of cells cultivated on the Thomas support can only be performed after a transfer step from a culture chamber to a support appropriate for mass spectrometry. This omission of this transfer step is of the utmost importance in the method of the invention because it allows direct analysis of a reaction medium containing cells without any transfer of the medium between the culture step and the introduction of the sample into the mass spectrometer. This provides a superior method because it avoids the bias induced by such a transfer step.

In Brown, samples are deposited on plates for analysis by mass spectrometry. However, in Brown the samples are mixed with a matrix deposited on the plate, dried and the matrix is crystalized. Once the sample is mixed with the matrix, if the sample is a live cell, it can no longer be cultivated because the matrix is not a culture medium and does not permit cell growth or proliferation. Consequently, there is no possibility to maintain a live cell on the plate by following the steps taught by Brown. If culture is desired, it must be performed prior to deposit of the cell/matrix mixture on the Brown plate. Of course, this requires an additional transfer step that does not occur in the method of the invention. This transfer step introduces error.

Thomas uses a support that is absolutely noncompatible with its direct introduction into a mass spectrometer. Thus, this document cannot suggest or provide a reasonable

expectation of success for the invention. The Thomas support is disk-shaped and includes a central well where cells are deposited. Radial microchannel elements connect the central well to cell growth chambers disposed circularly around the central well and which further connect the cell growth chambers to another circle of assay chambers. One of ordinary skill in the art would not have been motivated to use such an incompatible support for mass spectrometry. Accordingly, for all of these reasons this rejection cannot be sustained.

Rejection—35 U.S.C. §103(a)

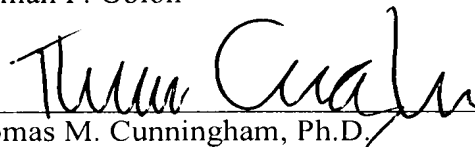
Claim 40 was rejected under 35 U.S.C. §103(a) as being unpatentable over Brown, et al., EP 1,284,496; in view of Schaack, et al., WO 2004/011938 or in view of Thomas, et al., U.S. Patent No. 6,632,656; and further in view of alleged admissions of prior art in the specification. This rejection is moot in view of the provision of an English translation of the priority document (attached) and for the reasons discussed above.

Conclusion

This application presents allowable subject matter and the Examiner is respectfully requested to pass it to issue. The Examiner is kindly invited to contact the undersigned should a further discussion of the issues or claims be helpful.

Respectfully submitted,

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MAIER & NEUSTADT, L.L.P.
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A handwritten signature in black ink, appearing to read "Thomas Cunningham", written over a horizontal line.

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